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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/598,731	06/21/2000	Roy R. Weidman	13368	7041

7590

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EXAMINER

LE, DANG D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/598,731

Applicant(s)

WEIDMAN ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 22-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-10,16,17,20 and 28 is/are rejected.
- 7) ☒ Claim(s) 3,6,11-15,18,19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 2, 4, 5, 7-10, 16, 17, 20 and 28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 9, 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomba et al. in view of Endress et al.

Regarding claim 1, Bomba et al. show a rotating machine (Figure 3) comprising:

- A rotating shaft;

- A plurality of conductive rotor bars (1) spaced from the rotating shaft and fixed thereto through at least one intermediate member (13), at least one of the plurality of conductive rotor bars formed of a material and having at least one first internal conduit (6) formed in the material.

Bomba et al. do not show circulation means for establishing a coolant circulation through the first internal conduit.

Endress et al. show circulation means (15) for establishing a coolant circulation through the first internal conduit for the purpose of reducing heat.

Since Bomba et al. and Endress et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use circulation means for establishing a coolant circulation through the first internal conduit as taught by Endress et al. for the purpose discussed above.

Regarding claim 9, it is noted that Endress et al. also show the first internal conduit being cylindrical (Figure 6) and located at an area of increased cross-section (Figure 2) of each conductive rotor bar having the at least one first internal conduit.

Regarding claim 20, it is noted that Endress et al. also show the at least one intermediate member (10) comprising a plurality of parallel stacked laminates, each laminate having a central bore for acceptance of the rotating shaft (11) therein and a

slot (Figures 2, 6 and 8) corresponding to each of the plurality of conductive rotor bars for acceptance of each of the plurality of conductive rotor bars therein.

Regarding claim 28, it is noted that Bomba et al. also show the plurality of conductive rotor bars having an exterior surface (surface contacting 16) defining an outer periphery, at least one of the plurality of conductive rotor bars having at least one first internal conduit (6) formed within the outer periphery.

5. Claims 2, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomba et al. in view of Endress et al. as applied to claim 1 above, and further in view of Butterfield et al.

Regarding claim 2, the machine of Bomba et al. modified by Endress et al. includes all of the limitations of the claimed invention except for the rotating shaft having a first wall defining a second internal conduit extending from an inlet end to an outlet end thereof, the rotating shaft further having first and second coolant holes in the first wall and communicating with the second internal conduit, wherein the coolant is circulated through the first internal conduit from the second internal conduit by way of the first and second coolant holes.

Butterfield et al. show the rotating shaft (11) having a first wall defining a second internal conduit extending from an inlet end (left side, inner, Figure 1) to an outlet end (left side, outer, Figure 1) thereof, the rotating shaft further having first and second coolant holes (not shown at right side, 23) in the wall and communicating with the second internal conduit, wherein the coolant is circulated through the first internal

conduit (21) from the second internal conduit (18) by way of the first and second coolant holes for the purpose of improving heat transfer.

Since Bomba et al., Endress et al. and Butterfield et al. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the rotating shaft having a first wall defining a second internal conduit extending from an inlet end to an outlet end thereof, the rotating shaft further having first and second coolant holes in the wall and communicating with the second internal conduit, wherein the coolant is circulated through the first internal conduit from the second internal conduit by way of the first and second coolant holes as taught by Butterfield et al. for the purpose discussed above.

Regarding claim 16, it is noted that Butterfield et al. also show a circulation conduit (Figure 2) connecting the inlet end of the rotating shaft to the outlet end of the rotating shaft; and Endress et al. also show a pump (15) disposed in a fluid path of the circulation conduit for establishing a coolant flow into the inlet end, through the first and second internal conduits for each conductive rotor bar having the at least one first internal conduit, and out the outlet end.

Regarding claim 17, it is noted that Endress et al. also show a heat exchanger (17) disposed in the fluid path of the circulation conduit for removing heat from the coolant flowing therein.

6. Claims 4, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomba et al. and Endress et al. as applied to claim 1 above, and further in view of Newhouse.

Regarding claim 4, the machine of Bomba et al. modified by Endress et al. includes all of the limitations of the claimed invention except for each of the plurality of conductive rotor bars having the at least one second internal conduit.

Newhouse shows each of the plurality of conductive rotor poles having the at least one second internal conduit (44, Figure 3) for the purpose of increasing heat transfer.

Since Bomba et al., Endress et al. and Newhouse are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to increase in each of the plurality of conductive rotor bars with the at least one second internal conduit as taught by Newhouse for the purpose discussed above.

Regarding claim 5, it is noted that Newhouse also shows the at least one first internal conduit comprises two first internal conduits (44, Figure 3), and Endress et al. also show the conduits extending from the first to second end of the conductive rotor bars.

Regarding claim 10, it is noted that Newhouse also shows each of the two first internal conduits (44) being cylindrical, and Endress et al. also show at least one of

which is located at an area of increased cross-section of each conductive rotor bar (Figure 2) having the two first internal conduits.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomba et al. in view of Endress et al. as applied to claim 1 above, and further in view of Rank et al.

Regarding claim 7, the machine of Bomba et al. modified by Endress et al. show all of the limitations of the claimed invention including the means for sealingly fixing the first and second ends of each conductive rotor bar (35) having the at least one first internal conduit (33) comprising a brazed joint (die casting) at the juncture between each of the first and second ends (left and right) of each conductive rotor bar having the at least one first internal conduit and their respective end plate (37). Endress et al. do not show the plurality of conductive rotor bars and first and second end plates being fabricated from aluminum

Rank et al. show the plurality of conductive rotor bars (48) and first and second end plates (50, 52) being fabricated from aluminum for the purpose of making a squirrel cage rotor.

Since Bomba et al., Endress et al. and Rank et al. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the plurality of conductive rotor bars and first and

second end plates of aluminum as taught by Rank et al. for the purpose discussed above.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomba et al. in view of Endress et al. and Rank et al. as applied to claim 7 above, and further in view of Belt et al.

Regarding claim 8, the rotating machine of Bomba et al. modified by Endress et al. and Rank et al. includes all of the limitations of the claimed invention except for the brazed joint comprising a salts brazed joint.

Belt et al. show the brazed joint comprising a salts brazed joint for the purpose of improving the flow behavior of the solder.

Since Bomba et al., Endress et al., Rank et al., and Belt et al. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the brazed joint with a salts brazed joint as taught by Belt et al. for the purpose discussed above.

Allowable Subject Matter

9. Claim 27 is allowed.

10. Claims 3, 6, 11-15, 18, 19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show a rotating machine with each of the plurality of conductive rotor bars having a first and second end, the at least one first internal conduit extending from the first to second end; the rotating machine further comprising:

- A first end plate having a first bore in which the rotating shaft is sealingly fixed in proximity to the first coolant hole, the first end plate further having means for sealingly fixing the first end of each conductive rotor bar having the at least one first internal conduit thereto, the first end plate further having a third internal conduit for each of the plurality of conductive rotor bars having the at least one first internal conduit for providing communication between the first coolant hole and the first end of the first internal conduit; and
- A second end plate having a second bore in which the rotating shaft is sealingly fixed in proximity to the second cooling hole, the second end plate further having means for sealingly fixing the second end of each conductive rotor bar having the at least one first internal conduit thereto, the second end plate further having a fourth internal conduit for each of the plurality of conductive rotor bars having the at least one first internal conduit for providing communication between the second coolant hole and the second end of the first internal conduit;

- Wherein the circulation of coolant is established through the first, second, third, and fourth internal conduits for each conductive rotor bar having the at least one second internal conduit as shown in claims 3 and 27.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information on How to Contact USPTO

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
January 2, 2003

il

Larry L. L.